

No.

8200105



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Moran Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF **LAW** IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE **PLANT VARIETY PROTECTION OFFICE**, IN THE **APPLICANT(S)** INDICATED IN THE SAID COPY. AND **WHEREAS**, UPON DUE EXAMINATION MADE, THE SAID **APPLICANT(S)** IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE **LAW**.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID **APPLICANT(S)** AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID **APPLICANT(S)** FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY **LAW**, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT THEREFROM, TO THE EXTENT PROVIDED BY THE **PLANT VARIETY PROTECTION ACT** (U.S.C. 542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'Moran 3053'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington, D.C.
this 26th day of November in
the year of our Lord one thousand nine
hundred and eighty-two

Attest:

Kenneth H. Evans
Acting

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture


U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION

FORM APPROVED: OMB NO. 0581-0005

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) Mbran Seeds, Inc.		2. TEMPORARY DESIGNATION NCX 3053 MORAN 3053		3. VARIETY NAME None MORAN 3053	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 1155 Harkins Road Salinas, CA 93901		5. PHONE (Include area code) (408) 757-3651		FOR OFFICIAL USE ONLY PVPO NUMBER 8200105	
6. GENUS AND SPECIES NAME Lycopersicon esculentum		7. FAMILY NAME (Botanical) Solanaceae		FILING DATE 4/20/82 TIME 10:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Tomato		9. DATE OF DETERMINATION September, 1979		FEES RECEIVED AMOUNT FOR FILING \$ 500.00 DATE 4/20/82 AMOUNT FOR CERTIFICATE \$ 250.00 DATE 10/19/82	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				12. DATE OF INCORPORATION December 29, 1978	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION California					
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. Frank V. Westerlund Mbran Seeds, Inc. 1155 Harkins Road Salinas, CA 93901					
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement </div> <div style="width: 48%;"> c. <input checked="" type="checkbox"/> Exhibit C, Objective /Description of the Variety (Request form from Plant Variety Protection Office.) d. <input type="checkbox"/> Exhibit D, Additional Description of the Variety </div> </div>					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified			
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES? <div style="text-align: right;"> <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No </div>					
19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES? <div style="text-align: right;"> <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No </div>					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties,					
SIGNATURE OF APPLICANT 				DATE 4/15/82	
SIGNATURE OF APPLICANT				DATE	

INSTRUCTIONS

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (~~\$250 filing fee and \$250 examination fee~~) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41 (a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (*See section 180.16 of the Regulations and Rules of Practice.*)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



EXHIBIT AOrigin and breeding history of the variety.

- DDW
10/20/82
1. ^{MORAN} ~~NCX~~ 3053 originated in California from a hand pollinated cross between Rutgers 8828 and a proprietary line which resulted from a cross of A48 (Calif.) times Kecskemeti 1030 (Hungary). The crosses were completed in 1969.
2. Pure line selections were made through the F-8. The F-9 was bulk harvested as line 1074 and assigned NCX 3053 in 1979. Selections were based on horticultural type for machine harvest and for high soluble solids. Yield and adaptation studies were conducted in up to twenty-five locations from 1979 to 1981.
3. NCX 3053 breeds true and no variants have been found.
4. The genetic makeup was stabilized in F-8. Three successive years of field trials showed no offtypes and therefore a homogenous variety. Soluble solids data indicate that NCX 3053 is slightly higher than the standard variety 7879 in most environments.

8200105

EXHIBIT B

Novelty statement

881K
10/20/82
10/20/82
3053' most closely resembles VF145-7879 but is easily distinguished from it by its superior firmness, jointless fruit pedicels and darker green and more compact plant.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, GRAIN, AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
TOMATO (*Lycopersicon esculentum* Mill.)

Name of applicant Moran Seeds, Inc.	Temporary designation MORAN NGX 3053	Variety Name <div style="border: 1px solid black; padding: 2px;"> FOR OFFICIAL USE ONLY PVPO NUMBER 8200105 </div>
Address (Street and No. or R.F.D. No., City, State, Zip) Post Office Box 2508 El Macero, California 95618		

Choose responses which best represent your variety in the characters below. When a single quantitative value is requested (e.g. fruit weight), your answer should be the mean of an adequate, -unbiased sample of plants. The applicant variety should be compared with at least one well-known standard check variety of the same type, and **grown** in the same trial(s). The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse _____ or field X plantings. Trials direct-seeded X or transplanted. _____ Give locations and **dates of trials** Davis, Ca. Aug 1981. Use leading zeroes when necessary (e.g. 1019 or 101811). Complete this form as fully as possible for best characterization of the variety.

1. **SEEDLING:** (2-15 cm, well-illuminated)

- ☒ Anthocyanin in hypocotyl: 1 = absent 2 = present
☒ Cotyledon: 1 = normal 2 = giant

2. **MATURE PLANT:**

- ☒ Growth: 1 = Indeterminate 2 = semi-determinate 3 = determinate
☒ Size (compared to others of its growth type): 1 = small 2 = medium 3 = large
☒ Habit: 1 = sprawling (decumbent) 2 = semi-erect 3 = erect
☒ Foliage cover: 1 = light 2 = moderate 3 = heavy

3. **STEM:**

- ☒ Internode length (between the 1st and 4th inflorescences):
 1 = short () 2 = Intermediate () 3 = long ()
☒ Branching: 1 = sparse (**Brehm's Solid Red**) 2 = intermediate ()
 3 = profuse (UC82)
☒ Branching at cotyledonary or first leafy node: 1 = present 2 = absent
☒ Pubescence: 1 = smooth (no long hairs) 2 = **sparsely** hairy (scattered long hairs)
 3 = densely hairy or canescent
☒ No. of nodes below the first inflorescence:
 1 = few (**2-3**) 2 = Intermediate () 3 = many ()
☒ No. of nodes (leaves) between **inflorescences**
☒ Thickness: 1 = slender, weak 2 = medium thickness 3 = thick, stiff

4. **LEAF** (Mature leaf under the 1st to 3rd inflorescence):

- ☒ Type: 1 = tomato 2 = potato
☒ Division: 1 = once-pinnate 2 = intermediate (**pinnate-bipinnate**)
 3 = bipinnate, many small leaflets with the large ones
☒ Attitude: 1 = semi-erect 2 = horizontal 3 = drooping
☒ Leaflet blade: 1 = thin 2 = medium 3 = thick
☒ Bases of major leaflets: 1 = even 2 = oblique (the sides offset on petiole)
☒ Margins of major leaflets: 1 = nearly entire 2 = shallowly toothed or scalloped
 3 = deeply toothed or cut, especially towards base
☒ Marginal rolling: 1 = absent 2 = present

TOMATO - 2

4. **LEAF** (Mature leaf under-the 1st to 3rd **inflorescences**) (continued):

- 1 Surface of major leaflets: 1 = smooth 2 = rugose (bumpy or veiny)
 2 Leaflet: 1 = normal 2 = slightly **wilty** 3 = **wilty**
 2 Shape of major leaflets: 1 = broadly ovate 2 = ovate to lanceolate
 3 = slender and lanceolate, tapered to a point
 2 Pubescence or hairiness: 1 = smooth 2 = **normal** 3 = **wooly**
 4 Color of leaflets: 1 = light green (Earliaorth) 2 = medium green ()
 3 = gray-green () 4 = dark green (UC82) 137A)
 2 Color of leaf on check variety (same scale): Variety VF145-7879(146A)

5. INFLORESCENCE:

- 1** Type: 1 = simple (**racemose**) 2 = forked (2 **major** axes) 3 = compound (much **branch**
1 No. of flowers setting fruit (in 2nd or 3rd **inflorescence**):
 1-1-4, 2 = 4-8, 3 = 8-12, 4 = 12 or more

6. FLOWER:

- ☐ Calyx: 1 = normal (lobes awl-shaped) 2 = tnacrocalyx (lobes large, leaflike)
 3 = fleshy
☐ Flower color: 1 = yellow 2 = old gold 3 = white or tan
☐ Style **exsertion**: 1 = included 2 = even with stamens 3 = exserted
☐ Style pubescence: 1 = absent 2 **sparse** = dense
☐ Anthers: 1 = all **fused** into tube 2 = separating into 2 or **more** groups at **anthesis**
☐ **Fasciation** (1st flower of 2nd or 3rd **inflorescence**):
 1 = absent 2 = occasional **present** 3 = frequently present

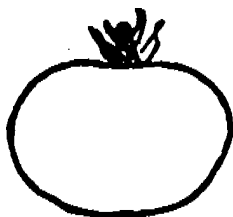
7. FRUIT (3rd fruit of 2nd or 3rd cluster):

- Abscission layer: 1 = present (pedicellate) 2 = absent (jointless)
 mm. Length of pedicel (from abscission layer or joint to **calyx** attachment)
 Mature fruit: Maximum diameter:
 1 = small cherry (< 20 mm) 2 3 large cherry (20-35 mm)
 3 = cocktail (35-48 mm) 4 = U.S. extra small (48-54 mm)
 5 = U.S. small (54-58 mm) 6 = U.S. medium (58-64 mm)
 7 = U.S. large (64-73 mm) 8 = U.S. extra large (73-88 mm)
 9 = U.S. maximum large (88-100 mm) 10 = U.S. maximum large (> 100 mm)
 4 Maximum diameter of check variety, same classes as above
 (Specify name) VF145-7879
 073 g Fruit weight 087 g Check variety VF145-7879

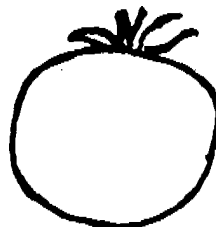
- 4 Predominant fruit shape:



(1)



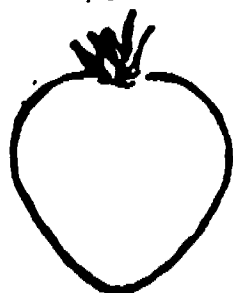
(2)



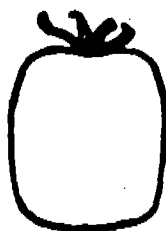
(3)



(4)



(5)



(6)



(7)



(8)



(9)

7. FRUIT (3rd fruit of 2nd or 3rd cluster):

TOMATO - 3

☐ Shape of transverse section:

1=round



2=flattened



3=angular



4=irregular

☒ 3 Shape of blossom end:

1=indented



2=flat



3=nipped



4=tapered

☐ Shape of stem end:

1=flat



2=indented

☐ 1 Shape of pistil scar:

1=dot



2=stellate



3=linear



4=irregular

☐ Fruit surface: 1 = smooth 2 = slightly fasciated 3 = moderately fasciated☐ Fruit color (mature-green stage):

1 = light green ('Lanai', VF145-F5) 2 = Lt. gray-green ()

3 = apple green ('Heinz 1439 VP') 4 = dark green ()

☐ Fruit pattern (mature-green stage): 1 = green shouldered 2 = uniform green☐ 5 Mature fruit color (full-ripe): 1 = white 2 = yellow 3 = tangerine
4 = pink 5 = red 6 = brownish-red
7 = greenish 8 = other (specify) _____☐ 2 Flesh color (full-ripe): 1 = yellow 2 = red 3 = crimson 4 = other _____☐ 1 Epidermis: 1-normal 2 = easy-peel☐ 2 Epidermis color: 1 = colorless 2 = yellow☐ 2 Epidermis thickness: 1 = thin 2 = average 3 = thick☐ 2 Thickness of pericarp: 1 = thin (73 mm) 2 = medium (3-6 mm) 3 = thick (> 6 mm)☐ 2 Thickness of pericarp of check variety (same scale) Variety: VF145-7879☐ 2 Core size: 1 = coreless 2 = small 3 = medium 4 = large☐ 1 Core shape: 1 = solid, unbranched 2 = branched☐ 1 Core texture: 1 = soft, edible 2 = tough or fibrous☐ 2 Stem scar size: 1 = small () 2 = medium (7-8 mm) 3 = large ()☐ 3 No. of locules: 1 = two 2 = three and four 3 = five or more☐ 6 Fruit firmness¹ (minimum table-ripe):

1 - extra-soft ('Gardener') 2 = very soft ('Valiant') 3 = soft ('Campbell 28')

4 = fairly firm ('Tropic') 5 = firm ('MH-1') 6 = very firm ('UC-82')

8. PHENOLOGY (Growing degree days, or heat units on a base temperature of 51° F are preferable--but you may report either growing degree days or calendar days. Circle either "days" for calendar days, or "heat units" for growing degree days):

(Days/heat units from seed to first open flower:

☒ 4 6 days, Application variety ☒ 4 3 days, Check variety No. 1 VF145-7879☒ 4 8 days, Check variety No. 2 Niagara 3032

(Days/heat units from (seed/transplant (indicate which) to first ripe fruit:

☐ days, Application variety ☐ days, Check variety No. 1 VF145-7879☐ days, Check variety No. 2 Niagara 3032

For definitions of these subjective terms see Kader & Morris (1976) In: Proc. 2nd Tomato Quality Workshop.

- | | |
|----|---|
| 12 | 5 |
| 13 | 5 |

 days, Application variety

12	5
13	5

 days, Check variety No. 1 VF145-7879
 days, Check variety No. 2 Niagara 3032

Days/Heads units from breaker to check type stage:

07 days, Application variety **008** days, Check variety No. : VF145-7879

010 days, Check variety No. 2 VN1aara 3032

☐ days, Application variety ☐ days, Check variety No. 1 _____
☐ days, Check variety No. 2 _____

- [4] Fruiting season: 1 = long ('Marglobe') 2 = medium ('Westover')
3 = short, concentrated ('VF 145') 4 = very concentrated ('UC 82')
- [3] Relative maturity: 1 = early 2 = medium early 3 = medium
4 = medium late 5 = late

- | | | | | | |
|---|---|---------------------|-------------------------------------|-------------------------|--|
| 1 | | Culture: | 1 = field | 2 = greenhouse | |
| 1 | | | 1 = unstaked | 2 = staked or trellised | |
| 3 | | Principal use(s): | 1 = home garden | 2 = fresh market | |
| | | | 3 = processing | 4 = other | |
| 2 | | Machine harvest: | 1 = not adapted | 2 = adapted | |
| 8 | 9 | Recommended region: | 1 = Northeast/Midatlantic | 2 = Southeast | |
| | | | 3 = Midwest/Great Lakes | 4 = South-central | |
| | | | 5 = Great Plains | 6 = Intermountain West | |
| | | | 7 = Northwest | 8 = Central California | |
| | | | 9 = Southwest/So. California | 10 = General | |
| | | | 11 = Other (specify) | | |

- 2 Growing season temperature: 1 ■ cool 2 ■ normal warm 3 = hot 4 = general
2 Growing season humidity: 1 = humid 2 = semi-arid 3 = general
3 Soils: 1 ■ mineral 2 ■ organic 3 = general

- [3] High temperature fruit set (subjective evaluation based on fruit set at temperatures that normally inhibit set in area of evaluation):
 1 = poor 2 = fair 3 = good ('Summertime') AREA Imperial Valley, Ca.
 [2] Low temperature fruit set (subjective evaluation based on fruit set at low temperatures that normally inhibit germination): 1 = poor 2 = fair 3 = good ('Veecrop')
AREA Davis, California
 [2] Low temperature seed germination: 1 = poor () 2 = fair ()
 3 = good ()

11. **RESISTANCE** TO FRUIT DISORDERS (Use code: 0-unknown, 1=susceptible, 2³resistant):

- | | |
|---|----------------------|
| 2 | Blossom end rot |
| 2 | Catface |
| 0 | Cracking, concentric |
| 0 | Gold fleck |

- | | |
|---|------------------------------|
| 2 | Bursting |
| 0 | Cracking, radial |
| 0 | Fruit pox |
| 2 | Graywall or blotchy ripening |

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12. DISEASE AND PEST REACTION (Use code: 0=not tested, 1=susceptible, 2=resistant) If claim of novelty is based wholly or in part upon disease resistance, trial data should be appended (Exhibit D) and should include date and location of trial(s), method of testing, reaction of application variety, and reaction of check varieties (identified by name).

Viral Diseases:

- | | | |
|--|--|--|
| <input type="checkbox"/> Cucumber mosaic | <input type="checkbox"/> Curly top | <input type="checkbox"/> Potato-Y virus |
| <input type="checkbox"/> Tobacco mosaic, Race 0 | <input type="checkbox"/> Tobacco mosaic, Race 1 (Tm 1) | <input type="checkbox"/> Tobacco mosaic, Race 2 (Tm 2) |
| <input type="checkbox"/> Tobacco mosaic, Race 22 (Tm 22) | <input type="checkbox"/> Tomato spotted wilt | <input type="checkbox"/> Tomato yellows |
| <input type="checkbox"/> Other (specify) _____ | | |

Bacterial Diseases:

- | | |
|---|---|
| <input type="checkbox"/> Bacterial canker (<u>Corynebacterium michiganense</u>) | <input type="checkbox"/> Bacterial soft rot (<u>Erwinia carotovora</u>) |
| <input type="checkbox"/> Bacterial speck (<u>Pseudomonas tomato</u>) | <input type="checkbox"/> Bacterial spot (<u>Xanthomonas vesicatorium</u>) |
| <input type="checkbox"/> Bacterial wilt (<u>Pseudomonas solanacearum</u>) | |
| <input type="checkbox"/> Other bacterial disease (specify) _____ | |

Fungal Diseases:

- | | |
|--|--|
| <input type="checkbox"/> Anthracnose (<u>Colletotrichum</u> spp.) | <input type="checkbox"/> Botrytis rot or mold (<u>B. cinerea</u>) |
| <input type="checkbox"/> Brown root rot or corky root (<u>Pyrenochaeta lycopersici</u>) | |
| <input type="checkbox"/> Early blight (<u>Alternaria solani</u>) defoliation | <input type="checkbox"/> Collar rot or stem canker (<u>Alternaria solani</u>) |
| <input checked="" type="checkbox"/> Fusarium wilt, Race 2 (<u>F. oxysporum f. lycopersici</u>) | <input type="checkbox"/> Fusarium wilt, Race 1 (<u>F. oxysporum f. lycopersici</u>) |
| <input type="checkbox"/> Late blight, Race 0 (<u>Phytophthora infestans</u>) | <input type="checkbox"/> Gray leaf spot (<u>Stemphylium solani</u> , <u>S. floridanum</u>) |
| <input type="checkbox"/> Leaf mold, Race 1 (<u>Cladosporium fulvum</u>) | <input type="checkbox"/> Late blight, Race 1 (<u>Phytophthora infestans</u>) |
| <input type="checkbox"/> Leaf mold, Race 3 (<u>C. fulvum</u>) | <input type="checkbox"/> Leaf mold, Race 2 (<u>C. fulvum</u>) |
| <input type="checkbox"/> Nailhead spot (<u>Alternaria tomato</u>) | <input type="checkbox"/> Leaf mold, other races (specify) _____ |
| <input type="checkbox"/> Rhizoctonia soil rot (<u>R. solani</u>) | <input type="checkbox"/> Phytophthora root rot (<u>P. parasitica</u>) |
| <input type="checkbox"/> Southern blight (<u>Sclerotium rolfsii</u>) | <input type="checkbox"/> Septoria leaf blight (<u>Septoria</u> spp.) |
| <input checked="" type="checkbox"/> Verticillium wilt, Race 1 (<u>V. albo-atrum</u>) | <input type="checkbox"/> Target leafspot (<u>Corynespora cassicola</u>) |
| <input type="checkbox"/> Other fungal diseases (specify) _____ | <input type="checkbox"/> Verticillium wilt, Race 2 (<u>V. albo-atrum</u>) |

Insect and Pests:

- | |
|---|
| <input type="checkbox"/> Colorado potato beetle (<u>Leptinotarsa decemlineata</u>) |
| <input checked="" type="checkbox"/> Root knot nematode (<u>Meloidogyne incognita</u>) |
| <input type="checkbox"/> Spider mites (<u>Tetranychus</u> spp.) |
| <input type="checkbox"/> Sugar beet army worm (<u>Spodopora exigua</u>) |
| <input type="checkbox"/> Tobacco flea beetle (<u>Epitrix hirtipennis</u>) |
| <input type="checkbox"/> Tomato hornworm (<u>Manduca quinquemaculata</u>) |
| <input type="checkbox"/> Tomato fruitworm (<u>Heliothis zea</u>) |
| <input type="checkbox"/> Whitefly (<u>Trialeurodes vaporariorum</u>) |
| <input type="checkbox"/> Other (specify) _____ |

Pollutants:

- | | | |
|--------------------------------|---|--|
| <input type="checkbox"/> Ozone | <input type="checkbox"/> Sulfur dioxide | <input type="checkbox"/> Other (specify) _____ |
|--------------------------------|---|--|

REFERENCES

- Anonymous, 1976, All About Tomatoes. Ortho Books, Chevron Chemical Co., San Francisco. In three volumes: Midwest/Northeast Edition, West Edition, and South Edition.
- Ware, G. W. & J. P. McCollum, 1968. Producing Vegetable Crops. The Interstate Printer & Publishers, Inc., Danville, Illinois. (Chapter 30, pp. 451-473, "Tomatoes".)
- Webb, R. E., T. H. Barksdale, & A. K. Stoner, 1973, "Tomatoes" pp. 344-361 In: Nelson, R.R. (Ed) Breeding Plants for Disease Resistance. Pennsylvania State University Press, University Park.
- Young, P. A. & J. W. MacArthur, 1947. Horticultural characters of tomatoes. Bull. Texas Agric. Exper. Station No. 698.

98/11/152
10/26/82
EXHIBIT D

Data indicative of novelty. -

MORAN

~~NCX~~ 3053' most closely resembles VF145-7879 except it has
(1) jointless stem pedicel (2) firmer fruit (3) more
compact and darker green plant.

ADDITIONAL DESCRIPTION OF NOVELTY -

The enclosed data is from the 1980 and 1981 trials of a
major California processor. This data compares the per-
formance of NCX 3053 with industry standards in 58
different locations.

ASSIGNMENT

WHEREAS, Moran Seeds, Inc. ("Moran"), a corporation duly organized and existing under the laws of the State of Delaware is the owner of United States Plant Variety Protection Certificates (the "Certificates"), listed in Exhibit A hereto and Pending United States Plant Variety Protection Applications (the "Applications"), listed in Exhibit B hereto: and

WHEREAS, in accordance with a Technology Transfer Agreement (the "Transfer Agreement") among Celanese Corporation ("Celanese"), Moran Seeds, Inc., Joseph Harris Company, Inc., **CelPril** Industries, Inc., Harris Moran International **B.V.** ("Sellers"), Virginia Chemicals, Inc., Les Produits Organiques du Santerre-Orsan S.A. ("Orsan"), HMS Acquisition Inc., CP Acquisition Inc., and Exploitiemaatschappij Wolwevershaven B.V., dated January 7, 1985, and a Purchase Agreement dated December 7, 1985, as amended, among Celanese, Sellers and Orsan, Orsan has purchased from Moran said Certificates and Applications.

NOW, THEREFORE, in accordance with said Transfer Agreement and Purchase Agreement, Moran assigns to Orsan all of its rights, title and interest in and to said Certificates and Applications.

Moran hereby authorizes Orsan to apply for and obtain the recordation of this Assignment. Moran agrees that it shall, without further consideration, promptly and duly cause to be performed such lawful acts and execution of any other documents as Orsan may reasonably request in order for Orsan to obtain the full benefits of this Assignment and to permit Orsan to be duly recorded in each office, bureau and tribunal in the appropriate jurisdiction as the registered owner or proprietor of each of the rights hereby assigned. such instruments and documents shall include, without limitation, such applications, affidavits and other documents for filing in such jurisdictions as Orsan may from time to time reasonably request.

By these presents Orsan does hereby accept this Assignment and authorize the recording thereof with the appropriate authorities aforesaid.

IN WITNESS WHEREOF, the parties have caused this Assignment to be executed by its proper officers thereunto duly authorized this 10th day of January, 1985.

MORAN SEEDS, INC.,
Assignor

By: David A. Jenkins
David A. Jenkins
Vice President

LES PRODUITS ORGANIQUES DU
SANTERRE-ORSAN S.A.
Assignee

By: [Signature]
Title: Attorney-in-fact

STATE OF New York
COUNTY OF New York

Before me, a **Notary Public**, in and for said County, personally appeared Danish Jenkins who acknowledged that he is Vice President of Moran Seeds, Inc., the corporation which executed the foregoing instrument and who acknowledged he signed said instrument on behalf of said corporation by authority of its Board of Directors; and that said instrument is the free corporate act and deed of said Moran Seeds, Inc.

Sworn before me at New York this 10th day
of January, 1985

Alex C. Lengyel
NOTARY PUBLIC

(Notary Public)

My Commission Expires:

ALEX C. LENGYEL
Notary Public, State of New York
Commission Expires March 20, 1986

STATE OF New York
COUNTY OF New York

Before me, a Notary Public, in and for said County, personally appeared Patrice LaFoddy who acknowledged that he is ~~Patrice LaFoddy~~ of Les Produits Organiques du Santerre-Orsan S.A., the corporation which executed the foregoing instrument and who acknowledged he signed said instrument on behalf of said corporation by authority of its Board of Directors; and that said instrument is the free corporate act and deed of said Les Produits Organiques du Santerre-Orsan S.A.

Sworn before me at New York this 10th
day of January, 1985.

Alex C. Lengyel
NOTARY PUBLIC

(Notary Public)

My Commission Expires:

ALEX C. LENGYEL
Notary Public, State of New York
No. 101, 111
Qualified in New York County
Commission Expires: 12-1-86

United States Plant Variety Protection Certificates

<u>Cert. No.</u>	<u>Date Issued</u>	<u>Kind</u>	<u>Variety Name</u>	<u>Owner</u>
7200145	10/30/74	Garden Bean	Gem	Moran Seeds, Inc.
7200146	11/15/74	Watermelon	Charleston 76	Moran Seeds, Inc.
7400013	5/9/74	Lettuce	Calmaria	Moran Seeds, Inc.
7400014	6/19/74	Lettuce	Cal K-60	Moran Seeds, Inc.
7400071	6/19/74	Lettuce	Cabrillo	Moran Seeds, Inc.
7600032	9/15/77	Lettuce	Vanagara	Moran Seeds, Inc.
7600039	12/8/77	Lettuce	Morangold	Moran Seeds, Inc.
7800028	5/31/79	Muskmelon	Valley Gold	Moran Seeds, Inc.
7900038	1/14/82	Garden Bean	Blue Duet	Moran Seeds, Inc.
7900039	7/15/82	Snapbean	Score	Moran Seeds, Inc.
7900066	11/27/79	Cauliflower	Snowball 123	Moran Seeds, Inc.
8000020	7/31/80	Muskmelon	Top Net	Moran Seeds, Inc.
8000082	12/10/81	Lettuce	Delmar	Moran Seeds, Inc.
8200019	10/28/82	Onion	OMO M	Moran Seeds, Inc. Oshita, Inc.
8200061	3/24/83	Watermelon	Sun Gold	Moran Seeds, Inc.
8200104	10/28/82	Tomato	Advantage	Moran Seeds, Inc.
8200105	11/26/82	Tomato	Moran 3053	Moran Seeds, Inc.
8200027	4/23/83	Lettuce	El Toro	Moran Seeds, Inc.
8100172	9/29/83	Lettuce	Van Mor	Moran Seeds, Inc.
8300113	8/31/84	Muskmelon	Top Net SR	Moran Seeds, Inc.

Pending United States Plant Variety Protection Applications

<u>Application No.</u>	<u>Filing Date</u>	<u>Kind</u>	<u>Variety Name</u>	<u>Owner</u>
8100167	9/9/81	Lettuce	Yuma	Moran Seeds, Inc.
8300155	7/18/83	Celery	Bishop	Moran Seeds, Inc.
8300156	7/18/83	Celery	Deacon	Moran Seeds, Inc.
8300172	9/1/83	Tomato	Diego	Moran Seeds, Inc.
8400013	12/1/83	Lettuce	Greenfield	Moran Seeds, Inc.

DEED OF ASSIGNMENT

WHEREAS, Les Produits Organiques du Santerre - ORSAN (S.A.), a French corporation having a place of business at 16 rue Ballus, 75009 Paris, France (hereinafter referred to as "ASSIGNOR") owns and is using the Plant Variety Protection Certificates listed on the attached Exhibit for the indicated varieties which were awarded to ASSIGNOR by the Secretary of Agriculture on the indicated dates upon applications filed with the United States Plant Variety Protection Office; and

WHEREAS, Arisix (S. A.), a French corporation having a place of business at 6 1 rue des Belles Feuilles, 75 116 Paris, France,

(hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire right, title and interest in and to the said varieties and Plant Variety Protection Certificates;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and transferred, and by these presents does sell, assign and transfer unto said ASSIGNEE, and ASSIGNEE'S successors and assigns, all right, title and interest in and to the said varieties and said Plant Variety Protection Certificates in the United States including reissues, and including the right to enforce such rights against any past, present or future violation thereof, the said interest to be held and enjoyed by said ASSIGNEE as fully and exclusively as it would have been and enjoyed by said ASSIGNOR had this assignment and transfer not been made, to the full end and term of any right, title and interest assigned and transferred hereby.

ASSIGNOR further agrees that it will, without charge to said ASSIGNEE, but at ASSIGNEE's expense, cooperate with ASSIGNEE in the assignment of said Certificates and the perfection of all rights thereto, execute, verify, acknowledge and deliver all such further papers and instruments of assignment and transfer

IN TESTIMONY WHEREOF, an authorized representative of ASSIGNOR
has hereunto signed its name to this assignment on the date indicated below.

Date: 1/11/95

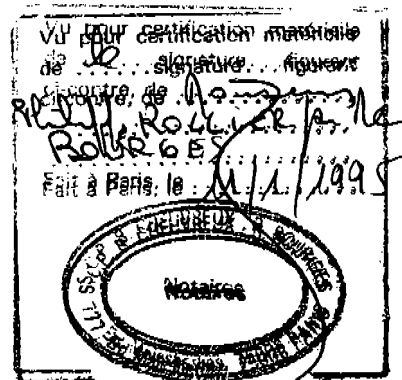
Sh. Zuber,

Print Name

Print Title

(Notaire)

Seal/Stamp



DEED OF ASSIGNMENT

WHEREAS, Arisix (S.A.), a French corporation having a place of business at 61 rue des Belles Feuilles, 75 116 Paris, France (hereinafter referred to as "ASSIGNOR") owns and is using the Plant Variety Protection Certificates listed on the attached Exhibit for the indicated varieties which were awarded to ASSIGNOR by the Secretary of Agriculture on the indicated dates upon applications filed with the United States Plant Variety Protection Office; and

WHEREAS, Clause (S.A.), a French corporation having a place of business at 1 Avenue Lucien Clause, 91221 Bretigny sur ORGE Cedex, France,

(hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire right, title and interest in and to the said varieties and Plant Variety Protection Certificates;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and transferred, and by these presents does sell, assign and transfer unto said ASSIGNEE, and ASSIGNEE'S successors and assigns, all right, title and interest in and to the said varieties and said Plant Variety Protection Certificates in the United States including reissues, and including the right to enforce such rights against any past, present or future violation thereof, the said interest to be held and enjoyed by said ASSIGNEE as fully and exclusively as it would have been and enjoyed by said ASSIGNOR had this assignment and transfer not been made, to the full end and term of any right, title and interest assigned and transferred hereby.

ASSIGNOR further agrees that it will, without charge to said ASSIGNEE, but at ASSIGNEE's expense, cooperate with ASSIGNEE in the assignment of said Certificates and the perfection of all rights thereto, execute, verify, acknowledge and deliver all such further papers and instruments of assignment and transfer

thereof, and will perform such other acts as ASSIGNEE lawfully may request, to obtain or maintain the listed Certificates and to vest title thereto in said ASSIGNEE or ASSIGNEE's successors and assigns.

IN TESTIMONY WHEREOF, an authorized representative of ASSIGNOR has hereunto signed its name to this assignment on the date indicated below.

Date: 11/11/95

Arisix (S.A.)

[Signature]

R DE SAINT RAPT

Print Name

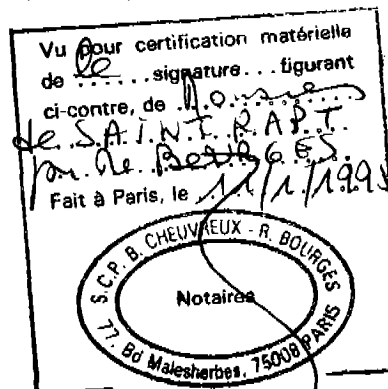
PRESIDENT

Print Title

On this date, _____, 1993, before me, the undersigned notary public, personally appeared the above-named assignor, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

(Notaire)

Seal/Stamp



EXHIBIT

Certif. #	Date Status Begins	Crop	Variety Name
7600032	09/15/77	Lettuce	Vanagara
7600039	12/08/77	Lettuce	Morangold
7605018	09/28/77	Marigold	Cabaret Orange
7800028	05/3 1/79	Muskmelon	Valley Gold
7800033	12/21/78	Radish	Fancy Red
7800086	01/25/79	Lettuce	Deep Red
7900038	01/14/82	Garden Bean	Blue Duet
7900039	07/15/82	Garden Bean	Score
7900066	11/27/79	Cauliflower	Snowball 123
8000020	07/31/80	Muskmelon	Top Net
8000082	12/10/81	Lettuce	Delmar
8100167	3/29/85	Lettuce	Yuma
8100172	09/29/83	Lettuce	Van Mor
8200027	04/23/83	Lettuce	El Toro
8200045	09/23/82	Turnip	Royal Gem
8200061	03/24/83	Watermelon	Sun Gold
8200068	12/30/82	Egg Plant	Little Fingers
8200104	10/28/82	Tomato	Advantage
8200105	11/26/82	Tomato	Moran 3053
8300024	12/30/83	Radish	Red King
8300113	08/31/84	Muskmelon	Top Net SR
8300155	02/22/85	Celery	Bishop
8300156	01/25/85	Celery	Deacon
8300172	11/29/85	Tomato	Harris Morgan 3075
8400013	2/19/88	Lettuce	Greenfield
8600032	03/11/88	Tomato	Murrieta II

1

Expired
Expired
Expired

PLANT VARIETY PROTECTION REGISTRATION ASSIGNMENTS

Clause, S.A. to Harris Moran Seed Company

WHEREAS, Clause, S.A. ("Assignor"), a corporation organized and existing under the laws of France, has sold and transferred assets, including plant variety protection registrations, to Harris Moran Seed Company ("Assignee"), a corporation organized and existing under the laws of the State of Maryland;

WHEREAS, Assignor, is the owner of the following plant variety protection registrations:

<u>VARIETY NAME</u>	<u>Registration No.</u>	<u>Issue Rate</u>
BLUE DUET	790003 8	01/14/82
SCORE	7900039	07/15/82
TOP NET SR	8300113	08/31/84
TOP NET	8000020	07/31/80
SNOWBALL 123	7900066	11/27/79
BISHOP	8300155	02/22/85
DEACON	8300156	01/25/85
LITTLE FINGERS	8200068	12/30/82
EL TORO MI	8200027	04/28/83
DELMAR MI	8000082	12/10/81
GREENFIELD MI	8400013	02/19/88
VAN MOR MI	8100172	03/29/83
YUMA MI	8100167	03/29/85

RED KING	8300024	12/30/83
MORAN 3053	8200105	11/26/82
ADVANTAGE	8200104	10/28/82
HARRIS MORAN 3075	8300172	11/29/85
ROYAL GEM	8200045	09/23/82
SUN GOLD	8200061	03/24/83

WHEREAS, Assignor is desirous of selling and Assignee is desirous of acquiring the aforesaid plant variety protection registrations of Assignor.

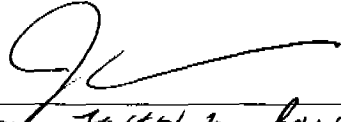
NOW THEREFORE, for \$10.00 and other good and valuable consideration, the receipt of which **is** hereby acknowledged, Assignor, by these presents sells, assigns and transfers to Assignee, its successors and assigns, all right title and interest in and to the above-referenced plant variety protection registrations, to be held and enjoyed by said Assignee, as fully as the same would have been enjoyed by said Assignor, had this assignment not been made.

Assignor also assigns and transfers to Assignee, any and all causes of action, claims, demands, or other rights occasioned from or because of any and all past infringement of any of the above referenced plant variety protection registrations.

Assignor further agrees that upon request, it will execute any and **all** documents necessary to vest **all** rights, title and interest in and to the above-referenced plant variety protection registrations

IN WITNESS WHEREOF, said Assignor, has affixed its signature hereto this 22 day of January, 1997

CLAUSE, S.A.

By: 
Name: John W. Fowler
Title: Chairman

ASSIGNMENT OF INTELLECTUAL, PROPERTY

WHEREAS, **HARRIS MORAN SEED COMPANY**, a **corporation** duly organized and existing under the laws of the State of Maryland, having its principal place of **business** at **45 11 Willow Road**, Suite 3, **Pleasanton**, California 94588 ("**Assignor**"), has, pursuant to that certain **Bill** of Sale and Assignment dated as of June **30, 1997**, transferred to FERRY-MORSE SEED COMPANY (CALIFORNIA), a **corporation** duly **organized** and existing under the laws of the State of California, having its principal place of business at **555 Codoni Avenue**, **P.O.** Box 4938, Modesto, California 95352-4938 ("**Assignee**"), **all** of **the intellectual** property Assignor had **adopted**, used and was using as of **the** effective date of this Assignment, including without limitation, the intellectual property represented by the United States Plant Variety Protection **Certificates** of Assignor **identified** on Schedule A hereto (**collectively**, the "Property"); and

WHEREAS, on the date hereof, Assignee has changed its name to "Harris Moran Seed Company";

NOW, **THEREFORE**, effective by **this** instrument as of the close of business on June **30, 1997**, and for good and valuable consideration, receipt of which is hereby acknowledged, Assignor hereby assigns to Assignee any and all right, **title** and interest worldwide in and to **the** Property and any and **all recordings** thereof, including, but not limited to, the use of the Property in any manner, **all** benefit of any and all prior use of the Property, and any **and all rights** to initiate claims-or **proceedings for** past, present& future **infringements** of Assignor's rights, title and interest in and to the **Property**.

Dated: as of June **30, 1997**

HARRIS MORAN SEED COMPANY

By:


Philip Ashcraft, President

CERTIFICATE OF AMENDMENT
OF THE
ARTICLES OF INCORPORATION
OF

FERRY-MORSE SEED COMPANY (CALIFORNIA)
(a California corporation)

1750010
ENDORSED
FILED
In the office of the Secretary of State
of the State of California

JUN 30 1997

Bill Jones
BILL JONES, Secretary of State

To the Secretary of State
State of California

Pursuant to the **provisions** of the General Corporation Law of the **State** of California, the undersigned officers of FERRY-MORSE SEED COMPANY (CALIFORNIA), a California **corporation** (the "Corporation"), do hereby **certify** as follows:

1. **The** name of the Corporation is Ferry-Morse Seed Company (California).
2. Article One of the Corporation's Articles of Incorporation, which relates to the **name of** the Corporation, is hereby amended **in its entirety** to read as follows:

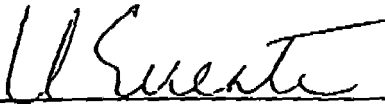
One. The name of **this** Corporation is:
HARRIS MORAN SEED COMPANY.

3. The amendment herein provided for has been approved by the Corporation's Board of Directors.

4. The **amendment herein provided for was approved** by the written **consent** of the Corporation's **sole** shareholder in accordance with the provisions of Section 902 of the California **General Corporation Law**. The total number of outstanding shares of the corporation is **5,000**.

IN WITNESS WHEREOF, each of the undersigned does hereby declare under the **penalty of perjury that he or she signed the foregoing Certificate** of Amendment as of **June 30**,

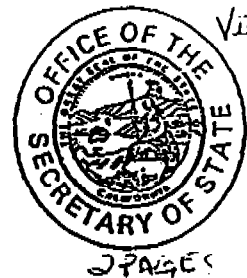
1997, in the Town of Modesto, State of California, in the official capacity set forth beneath his or her signature and that the statements set forth in this certificate are true of his or her own knowledge.


Yves Queste, President


Helen Andritsakis, Secretary

State of California

SECRETARY OF STATE



I, **BILL JONES**, *Secretary* of State of the State of California, hereby certify:

That the attached transcript has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of **the** State of California this

JUN 30 1937



Bill Jones

Secretary of State